Clinical Challenge: Alcohol - A Game to Teach Alcohol-related Clinical Skills to Medical Students

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Problem Statement: Medical students receive inadequate training in alcohol screening, assessment, and intervention despite the high cost of alcohol use to individuals and society. The topic is often covered very superficially in medical school and does not lend itself to standard training approaches. The packed medical school curriculum makes it difficult to add the topic to existing training, thus a solution which can be easily inserted was essential. Finally, the topic is not often perceived as interesting by students so a novel approach which makes the topic more exciting and challenging is essential to establishing enthusiasm.

Approach: In the game, medical student players assess and intervene with 3D simulated patients having common alcohol use challenges, from at-risk drinking to chronic addiction. During time-pressured encounters, learners make clinical decisions via a branched path game. They experience realistic patient responses based on their decisions, achieve game points for using evidence-based, patient-centered approaches, receive feedback from simulated faculty, and follow patients over time. After completing a needs analysis with students and their preceptors, we conducted iterative internal heuristic usability testing, followed by usability/alpha testing with students. This preliminary work improved the prototype, instructions, and content. Medical students and recent medical school graduates participated in additional testing to guide further development.

Lessons Learned: Regular and structured feedback for the user was found to be essential as we created the game. Needs analysis and end-user focused curriculum development indicate that the content was well organized and appropriate. Participants were satisfied with the design and rated the EHR interface highly. Usability test results confirmed the overall usability of the prototype, and specific usability weaknesses led to further improvements. Repeated usability assessment and revision of the game ensured that participants felt it was clear how to use the game and found it easy to use. In sum, the agile process led to a solution where learners were able to complete requested tasks quickly, felt learning could occur, and, would recommend the game to others.

Significance: Serious games can enhance interest and convey skills to medical students. Agile development techniques using regular and consistent feedback and input interspersed with development sprints offer a successful and rapid alternative to the more traditional waterfall approach which requires a long period of planning followed by development. Our final result was tuned to the target audience and well received. Games can and will be powerful tools to teach medical content and enhance current curricula, especially in areas that traditional curriculum has overlooked, such as alcohol use disorders and related topics.

References


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